

REMARKS

Claims 23 and 24 have been rejected under 35 U.S.C. §112, first paragraph as allegedly failing to comply with the written description standard. According to the Official Action, the recitation in Claim 23 that “the fluorescer molecules comprise a plurality of fluorescers pendent on a non-conjugated polymer backbone” is not supported in the specification. This rejection is respectfully traversed. In particular, support for Claim 23 can be found in the specification at least at page 10, line 5 *et seq.* Moreover, the specification describes “J-aggregating dye polyelectrolytes” or dye polymers that have “an ionic fluorescent dye chromophore on each repeat unit on a non-conjugated polymer” (page 10, lines 5-9 of the specification). The specification then states that “[t]he sensitivity to ‘superquenching’ of these polymers provides a basis for detection of specific target molecules at extremely low levels” (page 10, lines 21-22 of the specification). Furthermore, original Claim 10 was directed to chemical moieties comprising a J-aggregate fluorescer (page 16, lines 17-18 of the specification). It is respectfully submitted that the above disclosure provides adequate written description of the subject matter of Claims 23 and 24. Reconsideration and withdrawal of this rejection is therefore respectfully requested.

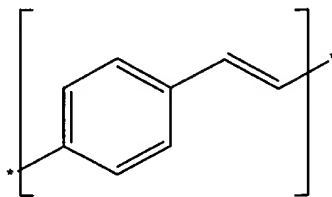
Claims 1, 4-8, 12 and 13 have been rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 5,849,489 to Heller (hereinafter referred to as “Heller”). This rejection is respectfully traversed.

The Official Action is relying upon the disclosure in Heller of a plurality of fluorescers attached to a “DNA polynucleotide strand” (see page 5 of the Official Action). As set forth in the Official Action, a polynucleotide backbone comprises phosphodiester linkages. The Official Action asserts that the “DNA polynucleotide strand” disclosed by Heller is a “conjugated backbone”. It is respectfully submitted that the phrase “conjugated backbone” would not be interpreted by one of ordinary skill in the organic/polymer chemistry arts as encompassing a

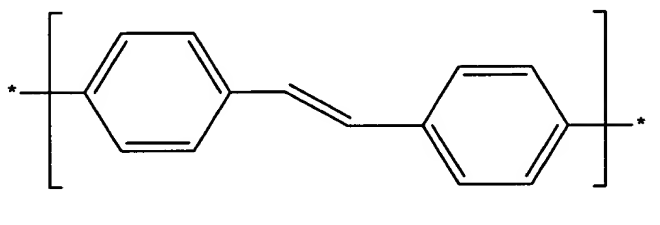
DNA strand. In particular, the art recognized definition of conjugated structures such as conjugated polymers is a structure possessing a de-localized pi-electron system (*e.g.*, a structure comprising alternating double and single bonds). See, for example, column 1, lines 21-24 of U.S. Patent No. 6,833,432 B2, a copy of which is attached. Polymers with conjugated backbones are also described in Sandman, "Semiconducting Polymers and their Solid-State Properties", TRIP, Vol. 2, No. 2, February 1994 and Wallace et al., "Conjugated Polymers: New Materials for Photovoltaics", Chemical Innovation, Vol. 30, No. 1, pp. 14-22, April 2000. Copies of these references are submitted herewith. Moreover, the dictionary definition of the term "conjugated" in the context of organic chemistry is "relating to or containing a system of two double bonds separated by a single bond" (Websters Third New International Dictionary, 1986). See also McMurry, "Organic Chemistry", 1984, page 409, a copy of which is also attached. It is well established that the words of a claim *must* be given their plain meaning (*i.e.*, they must be read as they would be interpreted by those of ordinary skill in the art). See MPEP §211.01. In view of the above, it is respectfully submitted that a "conjugated backbone" would have been understood by one of ordinary skill in the art to be a backbone possessing a de-localized pi-electron system (*e.g.*, a backbone comprising alternating double and single bonds).

Furthermore, it is clear from the context in which the term "conjugated" is used in the specification that this term is properly defined as "relating to or containing a system of two double bonds separated by a single bond". In particular, the specification provides various specific examples of conjugated polymers all of which possess this characteristic alternating single-double bonded backbone structure. For example, polymers derived from polyphenylene vinylene, poly(phenyleneethynylene), polyphenylene, polythiophene, and polyfluorene are specifically disclosed in the specification as examples of "conjugated polymers" (page 9, lines 13-16 of the specification). All of these polymers possess alternating single and double bonds.

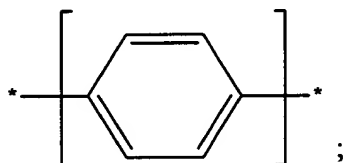
PPV polymers, for example, have the following repeat unit:



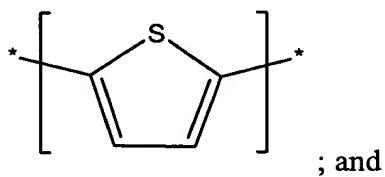
Similarly, polyphenylene ethynylene polymers have the following repeat unit:



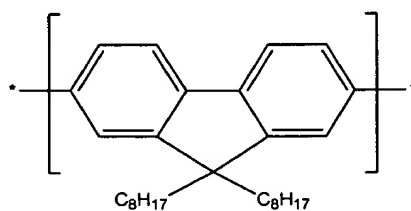
polyphenylene polymers have the following repeat unit:



polythiophene polymers have the following repeat unit:



polyfluorene polymers have the following repeat unit:



As can be clearly seen, all of the structures set forth above have a backbone comprising

alternating single and double bonds.

It should also be noted that the specification refers to “non-conjugated” polymers (page 10, line 8 of the specification). This phrase would be nonsensical if the Examiner’s definition of “conjugated”, which encompasses polynucleotides, were adopted. Rather, properly construed in the context of the application, “non-conjugated” clearly refers to polymers and other structures which do not possess a de-localized pi-electron system.

In the “Response to Arguments” section, the Official Action states that “. . . Claim 1 does not require that conjugated polymers comprise a chain or backbone of alternating double and single bonds . . .” (page 9 of the Official Action). Claim 1, however, recites that “the fluorescent moiety comprises a plurality of fluorescers attached to or part of a conjugated backbone”. As set forth above, the term “conjugated” in the field of organic chemistry is defined as “relating to or containing a system of two double bonds separated by a single bond”. The plain and ordinary meaning of “conjugated backbone” to one of ordinary skill in the relevant art would therefore be a backbone related to or comprising a system of two double bonds separated by a single bond (*e.g.*, a system of alternating double and single bonds).

In view of the above, it is respectfully submitted that the DNA strands disclosed in Heller do not have a *conjugated backbone* as set forth in Claim 1. Therefore, reconsideration and withdrawal of this rejection is therefore respectfully requested.

Claim 11 has been rejected under 35 U.S.C. §102(b) as being anticipated by Heller as evidenced by U.S. Patent No. 4,959,305 to Woodrum (hereinafter referred to as “Woodrum”). Claims 2 and 3 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Heller in view of U.S. Patent No. 6,355,421 B1 to Coull et al. (hereinafter referred to as “Coull”). Claim 9 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Heller. Claim 22 has been rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Heller in view of U.S.

Patent No. 5,342,789 to Chick et al. (hereinafter referred to as “Chick”).

All of the rejected claims depend either directly or indirectly from Claim 1. Further, each of these rejections relies upon the disclosure in Heller of a plurality of fluorescers attached to a polynucleotide strand as set forth above. As set forth above, however, the polynucleotide strand of Heller is not a “conjugated backbone” according to the plain and ordinary meaning of the term “conjugated” in the field of organic/polymer chemistry. Accordingly, reconsideration and withdrawal of each of these rejections is therefore respectfully requested.

Claim 10 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Heller in view of Chen et al., PNAS, 96, 12287-12292, October 1999 (hereinafter referred to as “Chen”). This rejection is respectfully traversed.

First, it is respectfully submitted that the Official Action has failed to establish a *prima facie* case of obviousness since the proposed combination of Heller and Chen would render the complex disclosed by Heller unfit for its intended purpose. In particular, Heller relies upon the hybridization of the polynucleotide strand to which the donor chromophores are attached to achieve the appropriate spacing for efficient donor-donor and donor-acceptor energy transfer (Figure 2A of Heller). The fluorescent polymer of Chen does not have a polynucleotide backbone and would therefore not hybridize to a target nucleic acid. Accordingly, substitution of the MPS-PPV polymer of Chen in the complex of Heller would result in a complex which is unfit for its intended purpose (*i.e.*, hybridization to a target resulting in efficient donor-donor and donor-acceptor energy transfer).

In the “Response to Arguments Section”, the Official Action states as follows.

The rejection is based on a motivation [sic] because the use of the fluorescence moiety taught by Chen et al., would lead to a greater than million-fold amplification of the sensitivity to fluorescence quenching relative to that of corresponding small conjugated molecules with similar structure. Thus, substitution of the MPS-PPV polymer of Chen et al., in the complex of Heller

would result in a complex which is unfit for its intended purpose as suggested by applicant is incorrect. (page 16 of the Official Action).

Applicant does not disagree that the fluorescent moiety of Chen produces an amplified signal. However, the relevant issue is not whether the fluorescent moiety of Chen produces an amplified signal but, rather, whether the proposed substitution would render the complex disclosed by Heller unfit for its intended purpose. Since the construct disclosed in Heller relies upon hybridization of the fluorester (*i.e.*, the polynucleotide strand) to a target nucleic acid and since the fluorescent polymer of Chen would not hybridize to a target nucleic acid, the proposed modification would necessarily render the complex disclosed by Heller incapable of hybridizing and therefore unfit for its intended purpose. It is well established that if a proposed modification would render a prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. See MPEP §2143.01.

Heller also teaches away from the proposed combination. In particular, Heller relies upon the spacing of the donor-donor pairs at specified distances on the polynucleotide strand (Column 13, Lines 45-59 of Heller). In fact, Heller teaches that close spacing of the donor-donor pairs can reduce energy transfer efficiency. As set forth in the attached declaration, the chromophores in fluorescent polymers such as MPS-PPV have much closer spacings than those disclosed in Heller. According to the Official Action, “. . . the spacing among these [sic] MPS-PPV is not related to spacings among donors taught by Heller because, in the rejection on Claim 10, the donors taught by Heller are replaced by of [sic] MPS-PPV polymer and is [sic] not substituted by MPS-PPV monomer” (page 16 of the Official Action). The Official Action is apparently contending that the individual fluoresters in the MPS-PPV polymer of Chen would have the spacings necessary to exhibit amplified superquenching. This assertion is not in dispute. However, as set forth above, Heller teaches away from donor-donor spacings which would

produce amplified superquenching. It is well established that a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. See MPEP §2141.02. It is respectfully submitted that Heller's teaching that the close donor-donor spacings which produce amplified superquenching are not desirable would lead one of skill in the art away from substituting a fluorescer which has such spacings (e.g., the fluorescer of Chen) in the complex of Heller.

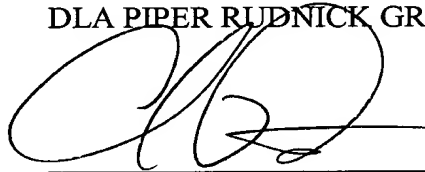
The proposed modification of Heller would also change the principle of operation of the complex disclosed in that reference. In particular, as set forth above, Heller relies upon the hybridization of the fluorescer (i.e., the polynucleotide strand to which fluorescent donors are attached). As set forth above, mere substitution of the fluorescer of Chen in the Heller complex would render the complex unfit for its intended purpose (i.e., the resulting complex could not hybridize to a target nucleic acid). In order to produce a functional construct, the proposed combination would require a substantial redesign of the Heller complex as well as a change in the basic principle under which that complex was designed to operate (i.e., the hybridization of the fluorescer itself). It is well established that if the proposed modification or combination would change the principle of operation of the reference being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. In re Ratti, 123 USPQ 349 (CCPA 1959). See MPEP §2143.01.

In view of the above, reconsideration and withdrawal of the rejection of Claim 10 is therefore respectfully requested.

Claims 1-13 have also been provisionally rejected under the judicially created doctrine of obviousness-type double patenting. Attached hereto is a Terminal Disclaimer over U.S. Patent Application Serial No. 10/098,387. It is respectfully submitted that the filing of this terminal disclaimer obviates this rejection. Reconsideration and withdrawal of this rejection is therefore respectfully requested.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read 'S. Kelber', is written over a horizontal line.

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In re RATTI
(CCPA)
123 USPQ 349
Decided Sept. 30, 1959
Appl. No. 6452
U.S. Court of Customs and Patent Appeals

Headnotes

PATENTS

1. Evidence—Judicial notice (§ 36.20)

It is common knowledge that resilient deformable materials such as natural or synthetic rubber are incompressible, i.e., while they may be deformed, this can occur only if design and mounting of part permits resilient material to change its shape in response to applied forces.

2. Patentability — Anticipation — Combining references (§ 51.205)

Patentability — Anticipation — Modifying references (§ 51.217)

Combination of J patent with C patent is not proper ground for rejection of claims since combination would require substantial reconstruction and redesign of elements shown in C as well as change in basic principles under which C construction was designed to operate; once applicant taught how this could be done, redesign may, by hindsight, seem to be obvious to one having ordinary skills in art, but, when viewed as of time applicant's invention was made, and without benefit of applicant's disclosure, court finds nothing in art of record which suggests applicant's novel device.

3. Court of Customs and Patent Appeals—Issues determined—Ex parte patent cases (§ 28.203)

Rejection reversed by Board is not before court.

4. Patentability—In general (§ 51.01)

Novelty alone is not enough for patentability.

5. Patent grant—In general (§ 50.01)

Applicant is entitled to patent, under the statutes, unless one of the prohibitory provisions of statutes applies.

6. Patentability—In general (§ 51.01)**Patentability—Evidence of—In general (§ 51.451)****Patentability—Utility (§ 51.75)**

Statutory requirements for patentability are novelty, usefulness, and unobviousness, as provided in 35 U.S.C. 101, 102, and 103; while proof that invention is better or possesses advantages may be persuasive of existence of any one or all of the requirements, and hence be indicative of patentability, Congress has not made such proof a prerequisite to patentability; moreover, Congress has never required that each and every patentable invention involve "progress" in the sense that it must possess some definite advantage over prior art; hence, it is improper to reject claim on ground that it does not possess some definite advantage over prior art; while R.S. 4893 may be said to have given Commissioner some discretion in refusing to grant patent on an otherwise patentable invention unless "the same is sufficiently useful and important," Congress removed this provision from new 35 U.S.C. 131; this is further indication that it is intent of Congress that patentability be determined solely by sections 101, 102, and 103.

7. Court of Customs and Patent Appeals—In general (§ 28.01)**Pleading and practice in Patent Office—In general (§ 54.1)**

It is duty of Patent Office and Court of Customs and Patent Appeals to apply law as Congress wrote it.

Particular patents—Oil Seal

Ratti, Oil Seal, claims 1, 4, 7, and 10 of application allowed.

Case History and Disposition:

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Appeal from Board of Appeals of the Patent Office.

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Application for patent of Ferdinand J. Ratti, Serial No. 359,325, filed June 3, 1953; Patent Office Division 52. From decision rejecting claims 1, 4, 7, and 10, applicant appeals. Reversed; Kirkpatrick, Judge, dissenting with opinion in which Worley, Chief Judge, joins.

Attorneys:

CROMWELL, GREIST & WARDEN (RAYMOND L. GREIST of counsel) both of Chicago, Ill., for appellant.

CLARENCE W. MOORE (S. WM. COCHRAN of counsel) for Commissioner of Patents.

Judge:

Before WORLEY, Chief Judge, RICH, MARTIN, and SMITH, Associate Judges, and KIRKPATRICK, Judge * .

Opinion Text

Opinion By:

SMITH, Judge.

This is an appeal from the decision of the Board of Appeals of the United States Patent Office affirming the rejection by the Primary Examiner of claims 1, 4, 7 and 10 of appellant's application serial No. 359,325, filed June 3, 1953, for a patent on an "Oil Seal" for sealing the space between a bore in a housing and a relatively movable shaft centrally located in the bore.

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Claim 1 is representative of claims 4 and 7 and reads:

1. A seal for insertion in a cylindrical bore in a housing about a relatively movable centrally located shaft, comprising an annular bore-engaging mounting portion of resiliently deformable material for endwise insertion in and statically sealed engagement with the bore in the housing, an annular shaft-engaging portion connected with said bore-engaging portion for running engagement with the shaft, and a *metal ring* located adjacent one end of said bore-engaging portion, said ring being *provided with a plurality of axially extending outwardly biased spring fingers in outwardly clamped engagement with said bore-engaging portion inwardly of the outer periphery of the latter, and said ring being also provided outwardly of said bore-engaging portion with means for detachably connecting the ring to the housing outwardly of the bore in the latter.* (Emphasis ours.)

Claim 10 differs from the other claims on appeal and reads:

10. A seal for insertion in a cylindrical bore in a housing about a relatively movable centrally located shaft, comprising a sealing ring having an outer bore-

engaging portion of resiliently deformable material, which portion is of somewhat larger diameter than the bore in the housing, for press-fit insertion in the bore, and a *metal retaining ring* associated with the sealing ring, said retaining ring being connected with the sealing ring and being provided outwardly of the latter *with resiliently yieldable hook formations which are adapted to be sprung into interlocking engagement with a complementary formation associated with the housing outwardly of the bore*, which engagement acts to prevent axial displacement of the sealing ring relative to the bore in the housing. (Emphasis ours.)

The references in the case are:

Roth, 1,546,942, July 21, 1925.

Norton, 1,951,034, Mar. 1, 1934.

Jepson, 2,544,324, Mar. 6, 1951.

Chinnery et al. (British), 578,526, July 2, 1946.

Appellant's shaft seal comprises an annular sealing member of resilient deformable material which is adapted to be inserted into a cylindrical bore surrounding a relatively movable shaft. The inner portion of the sealing member is provided with a flexible lip which is held in engagement with the shaft by a garter spring. In the outer portion of the sealing member, an annular slot is provided which is concentric with and spaced from the outer periphery of the sealing member. This slot extends axially from the end of the member and provides a pocket in which the axially extending outwardly biased spring fingers of a metallic attaching ring are located. This construction permits the spring fingers to exert a force on the resilient material in the direction of the annular wall of the bore to provide and maintain a snug engagement between the outer surface of the resilient member and the inner surface of the bore. The metallic attaching ring is also provided with radially extending resilient hooks located outwardly of the bore engaging portion of the resilient member. The housing is provided with a complementary formation outwardly of the bore which is engaged by the resilient hooks to provide a snap-on connection between the bore and the seal.

The Roth and Norton patents were relied upon by the examiner in rejecting claim 10, and since both references were considered by the board, we have included them in our consideration of this case. Roth shows a gasket structure for steam train line hose couplings. Norton shows an adjustable repair clamp for bell and spigot joints in which there is provided a sheet metal bridge piece "preferably of spring material." The bridge piece is sprung into interlocking engagement with a structural portion of the clamp and exerts its force on a resilient packing ring which, if desired, may be cemented to it.

The Chinnery et al. patent is the reference principally relied upon by the Patent Office. It shows a housing provided with a bore surrounding a centrally located shaft. A reinforced and "stiffened" sealing member formed of a material such as rubber, is press fitted into the space between the bore and the shaft. The sealing member has an inner lip held in contact with the shaft by a garter spring. The bore engaging portion of the sealing member is "stiffened" by an axially extending cylindrical sheet metal casing which acts as a reinforcing member for a definite purpose which is described by Chinnery et al. as follows:

Owing to the limited radial space within which the oil seal is to be

accommodated, the holding portion of the oil seal cannot be stiffened by being massive. Consequently the holding portion of the present oil seal is stiffened in the known manner by a reinforcement, which may either encase or line, or alternatively constitute, such holding portion and therefore makes the press-fitting contact with the machine part stationary relatively thereto, *or may be an internal reinforcement in the sense that it does not make press-*

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fitting contact with the machine part stationary relatively thereto. (Emphasis ours.)

In Fig. 8 Chinnery et al. shows a radially extending flange at the outer edge of a reinforcing member of the internal reinforcement type which flange extends beyond the sealing member "to such an extent as to serve as a means of attachment of the oil seal to the housing *i*, additional to the interference press fit of the holding portion *a* in the housing recess *g*. " The aforesaid flange is shown attached to the housing by screws or bolts.

The Jepson patent relates to a gasket for sealing the space between the upper and lower vessels of a vacuum-type coffee maker. The gasket is an annular rubber member attached to the lower part of the upper vessel and is designed to fit into the upper part of the lower one. Located in a groove in the gasket is a sleeve member provided with axially and downwardly extending spring fingers which are so biased radially as to urge the lower peripheral portion of the gasket outwardly, thus effecting a tight engagement with the mouth of the lower vessel.

Claims 1, 4, and 7 stand rejected on Chinnery et al. in view of Jepson, on the ground that it would not require "invention" to replace the cylindrical sheet metal reinforcing member, which is secured to the Chinnery et al. sealing member, by an annular set of outwardly biased spring fingers shown by Jepson.

The problems which were solved by appellant's invention existed in this art at the time of his invention despite the Chinnery et al. disclosures. It was appellant rather than Chinnery et al. who provided the art with a shaft seal in which the resilient element of the seal could be readily inserted into a bore in the housing so that it could be removed from the bore and replaced by a new sealing element without mutilation of the sealing surface of the bore. This is particularly important, the specification points out, where the bore is formed in light metal alloys such as are used in aircraft engines and which are relatively soft and easily damaged. In appellant's oil seal, the resilient seal is so constructed that when mounted in the bore, it will establish and maintain a fluid tight relationship between the outer peripheral surface of the resilient seal member and the inside of the bore. Where either natural or synthetic rubber is used as the resilient sealing member in such seals, the rubber in time will take a set or lose its resiliency at least to the extent that the seals soon become ineffective to prevent leakage of oil. When subjected to mechanical pressures and heat, such a rubber sealing element loses its sealing effectiveness at an accelerated rate. The problems in the oil sealing art arising from such use of resilient sealing elements appear to have persisted because of the failure of the art to recognize these characteristics of the rubber sealing element and to so design the resilient element and the mounting

therefor as to assure holding the outer circumference of the resilient sealing element in static oil-sealing contact with the inner circumference of the bore in which it is inserted.

Appellant's seal differs from the art of record in at least three respects:

(1) The provision of the annular slot which extends axially inward from one end of the resilient sealing element. This feature is claimed as part of the combination set forth in claim 4.

(2) The outwardly biased resilient spring means or fingers inserted in the resilient sealing element. These means are claimed as part of the combination of claims 1, 4 and 7.

(3) The "snap-on" connector which holds the resilient sealing element and engages with a complementary formation associated with the housing outwardly of the bore. This feature is in the combination of claim 10.

The patents cited by the examiner, either alone or in combination, do not disclose a resilient shaft sealing element having these features.

[1] It is common knowledge that resilient deformable materials such as either natural or synthetic rubber are incompressible, that is, while they may be deformed, this can occur only if the design and mounting of the part permits the resilient material to change its shape in response to the applied forces.

The seal construction disclosed in Chinnery et al. is such that the "interference press fit" which that patent calls for is alone relied on to keep the seal tight. There is nothing in the Chinnery et al. patent to show how the resilient sealing element is *maintained* in resilient contact with the bore otherwise than by the resiliency of the rubber. If and when that resiliency is lost, the sealing effect will be impaired.

Considering the incompressible nature of the rubber in the sealing element disclosed in Chinnery et al., its stiffening and reinforcement by the cylindrical sheet metal member, and its "interference press fit" in the bore, it seems clear to us that the Chinnery et al. seal cannot function in the manner of appellant's seal. Now, as to the contention that Jepson would suggest inserting a set of spring fingers, the resilient element of Chinnery et al. is forced so tightly into the bore

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and is so "stiffened" that the use of the resilient spring fingers of Jepson could not possibly increase the resilient deformation of the Chinnery et al. seal in the direction of the bore or increase the sealing engagement of the seal with the bore. The teaching of the Chinnery et al. patent points away from the addition of any spring element. On the other hand, we find nothing in the disclosure of Jepson's coffee maker gasket to suggest that any part of it has applicability to shaft seals. The two arts are at least somewhat remote from each other even if they both involve sealing.

[2] We, therefore, find that Chinnery et al. did not teach the shaft sealing art how to solve the problems which existed in that art at the time of appellant's invention. We hold, further, that the combination of Jepson with Chinnery et al. is not a proper ground for rejection of the claims here on appeal. This suggested combination of references would require a substantial reconstruction and redesign of the elements shown in Chinnery et al. as well as a change in the basic principles under which the Chinnery et al. construction

was designed to operate.

Once appellant had taught how this could be done, the redesign may, by hindsight, seem to be obvious to one having ordinary skills in the shaft sealing art. However, when viewed as of the time appellant's invention was made, and without the benefit of appellant's disclosure, we find nothing in the art of record which suggests appellant's novel oil seal as defined in claims 1, 4 and 7.

We shall now consider the rejection of claim 10, remarking first that it differs from claims 1, 4 and 7 in that it is directed to a combination of a housing bore, a resilient sealing ring and a metal retaining ring connected to the sealing ring, wherein the metal ring has *resilient hooks* which secure the seal in the bore. This claim is not limited to the outwardly biased spring fingers.

The examiner rejected claim 10 on two grounds: (1) that substitution for the screw securing means of Chinnery et al. of a series of spring hooks such as disclosed by Norton would not involve patentable invention, and (2) unpatentability over Roth.

[3] We shall first dispose of the second rejection. The board held that claim 10 is drawn to a combination of a sealing ring and a housing bore in which the sealing ring is detachably placed and that Roth discloses nothing of this nature. The board therefore reversed the rejection on Roth and consequently it is not before us.

As to the first rejection, the board recognized that it was on the ground of unpatentability "over Chinnery et al. in view of Norton" and pointed out that the examiner could see nothing patentable in substituting spring hook attaching means shown in Norton for the screws of Chinnery et al. It then said:

Appellant argues that the references fail to suggest or teach how the proposed [claimed] combination could be made and after a careful consideration of the references, *we have concluded that he is correct in this respect. We therefore concede that the claim * * * defines novelty over the disclosure of Fig. 8 of Chinnery et al.* Novelty alone however, is no proper basis for the allowance of a claim. (Emphasis ours.)

[4] Although, in reaching this conclusion, the board made no reference to Norton, the context compels the conclusion that novelty was found notwithstanding the disclosure of Norton, taken together with Chinnery et al. We fully agree, of course, with the board's statement that novelty alone is not enough for patentability.

With the next statement of the board, in explanation of its affirmance of the rejection of claim 10, we do not agree. It reads:

In order to *properly* define invention [meaning, of course, *patentable* invention], a claim should clearly define a structure *which possesses some definite advantage over the prior art*. As far as we can determine there is *no better* combination of housing and seal produced by using a series of snap fastener connections to connect the seal to the housing, as in appellant's structure, over using a series of bolts, as in the structure shown by Chinnery et al. Both act to merely detachably connect one element to another element and as far as we can find are merely equivalent connecting means especially in the absence of any unexpected result *or advantage* being obtained, by using one means in preference to the other, on which the record before us is entirely silent. (Emphasis ours.)

If we may extract from the foregoing what we understand to be the essence of the board's

position in the matter, it is that claim 10 is not patentable, though it defines a combination which is novel over the disclosures of the references, because the claimed combination has not been shown to be any better than, or to possess any advantage over, what was known to the art.

[5][6] As was pointed out in *In re Stempel, Jr.*, 44 CCPA 820, 241 F.2d 755, 113 USPQ 77, an applicant is entitled to a patent, under the statutes, unless one of the prohibitory provisions of the statutes applies. The statutory requirements

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for patentability, broadly stated, are novelty, usefulness and unobviousness, as provided in 35 U.S.C. sections 101, 102, and 103. While it is true that proof that an invention *is* better or *does* possess advantages may be persuasive of the existence of any one or all of the foregoing three requirements, and hence be indicative of patentability, Congress has not seen fit to make such proof a prerequisite to patentability.¹

[7]Appellant's invention, as defined in claim 10, has been held by the board to possess novelty over the disclosure of Chinnery et al. Just what the board thought about the pertinency of Norton is obscure but it seems to have regarded this reference as of little moment. Appellant in his brief here said that Norton was held by the board to have no bearing on the invention and the Patent Office brief said that the appellant was correct in so stating and that the court need not consider it. We are, therefore, virtually without any reference against claim 10 except Chinnery et al. and the rejection thereon is predicated solely on a theory of patentability we find to be outside of the patent statutes, namely, that the combination of claim 10 is, by reason of the use of spring retaining hooks instead of a series of bolts, *no better* than the combination of Chinnery et al. However intriguing such a ground of rejection may be, it is the duty of the tribunals of the Patent Office and of this court to apply the law as Congress has written it. While the provisions of the former R.S. 4893 may be said to have given the Commissioner some discretion in refusing to grant a patent on an otherwise patentable invention unless "the same is sufficiently useful and important," when the Patent Codification Act of 1952 was enacted, Congress removed this provision from old section 36 of title 35, now section 131. We take this as a further indication that it is the intent of Congress that patentability be determined solely by the provisions of sections 101, 102 and 103. We therefore reverse the board on this ground of rejection of claim 10.

If the issue before us were whether or not the spring hooks *are* better than the Chinnery et al. bolts—and we consider this in the event we have misapprehended the position of the board—we would hold that they are, on the basis of what is disclosed in the application. This retaining means seems to possess many advantages over screws. Similarly, if the board was intending to say that the hooks and the bolts are merely equivalent connecting means and that claim 10 is unpatentable because its combination differs from the prior art only in the substitution of an equivalent for one element in an old combination, then we would also have to disagree since we think it is clear that the use of the spring hooks produces a result quite different from the bolts of Chinnery et al. On the record before us no reference relied on shows any spring hooks nor does it contain any support for the contention that bolts and spring hooks are equivalents.

For the foregoing reasons we reverse the rejection of claim 10.
The rejections of claims 1, 4, 7 and 10 are *reversed*.

Footnotes

Footnote 1. A critical essay on the existing law has recently appeared under the title "A Proposal for: A Standard of Patentability; Consonant Statutory Changes; A Manual on Determination of Patentability," by Malcolm F. Bailey, 41 J.P.O.S. 192-225, 231-257. It advocates, as we understand it, that the present law should be changed to set up as the test for patentability, in place of the requirement of section 103 that an invention be unobvious, a requirement that the invention involve *progress*, which the author finds in the constitutional provisions. Congress has not seen fit to include in the statutes, at any time during the past 169 years so far as we are aware, a requirement that each and every patentable *invention* shall involve "progress" in this sense, i.e., that each new invention must also be shown to possess some definite advantage over the prior art. The author relates the term "progress" to individual inventions and then gives it the connotation that each such invention should be a technical advance, improvement or betterment. The very making of the suggestion to change the law is an indication that the existing law is otherwise.

Concurring Opinion Text

Concur By:

MARTIN, Judge, concurs in result.

Dissenting Opinion Text

Dissent By:

KIRKPATRICK, Judge, dissenting, in which WORLEY, Chief Judge, joins.

I think that the board's rejection of claims 1, 4 and 7 should be affirmed. The central idea and the most important feature of these three claims, as well as of allowed claim 5, is the exertion of outwardly directed pressure upon the bore engaging portion of the sealing member, the result accomplished being to counteract the tendency of rubber to "set" or lose its resiliency and so become ineffective to prevent leakage. Jepson comes very close to completely anticipating this feature of the patent. All that would be necessary to make the anticipation complete would be to provide the Jepson seal with a shaft engaging portion and, incidentally, claim 7 does not specify any shaft engaging portion.

Of course, it was necessary that the seal be attached to the bore in a manner to prevent its displacement. Chinnery provides a flange and screws for this purpose and none of the three claims referred to calls for anything more specific than "means." Thus it seems clear that

claims 1, 4 and 7 show no patentable novelty as against the prior art of Chinnery plus Jepson.

The only question is whether Jepson is in a nonanalogous art sufficiently remote from that of the application to put it beyond the probability that it would be considered by persons skilled in the art endeavoring to solve the problem to the solution of which the application is directed. I do not think that it is. Jepson was trying to meet exactly the same problem as the application under consideration, namely, to provide a compressible seal which could be readily detached or inserted in a cylindrical bore but which would maintain a firm and leakproof seat on the bore when in place. I agree with the Solicitor's argument that one seeking to improve a machinery seal would reasonably be expected to investigate not only machinery seals but seals in other arts where similar problems would be encountered. See *In re O'Connor*, 34 CCPA 1055, 161 F.2d 221, 73 USPQ 433 .

Claim 10 stands on a somewhat different basis. This claim entirely omits what I think, and have stated above, to be the heart of the application. In substance, claim 10 really amounts to no more than a claim for a hook formation to interlock with the housing of a bore in order to hold a press fit seal in place. ¹ Chinnery discloses means to serve the same purpose consisting of screws.

The board conceded that the combination disclosed in claim 10, consisting of spring hooks to fasten a press fit seal to the bore, disclosed novelty over Chinnery but not patentable novelty.

I do not read the opinion of the board as predicated its conclusion of want of invention on the theory that in order to be patentable a combination must have some distinct advantage over the prior art. The board stated that there was nothing in the record to show that the substitution of hooks for screws produced any unexpected result or advantage and, therefore, concluded that the introduction of hooks did not create patentable novelty, but was a mere substitution of equivalents. The statement that the spring hooks of Ratti were no better than the screws of Chinnery was directed toward this point and seemingly was added to fortify the board's finding of equivalency rather than to propound a theory of patentability. I agree with the board that this claim, though it may show novelty over Chinnery, does not show patentable novelty, and I would affirm its rejection.

Footnotes

Footnote 1. Chinnery discloses a press fit seal, but no one has suggested that there is anything new about such a device and the specification of the application before us concedes that it is old in the art.

Footnote * United States Senior District Judge for the Eastern District of Pennsylvania, designated to participate in place of Judge O'CONNELL, pursuant to the provisions of Title 28, United States Code, Section 294(d).

- End of Case -

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